

# The SUBURBAN and COUNTRY HOME FLOWERS, FRUITS and VEGETABLES

EDITED by EDWARD C. VICK

## Properly Planted, Few Plants Are Lost in Transplanting ---The Soil Must Be Firmed About the Roots and the Tops Properly Cut Back

A very large percentage of all trees and plants set out perish the first season after they are planted because the planting is not properly done. This is not because people do not take pains with the plants which they set out, but usually because of lack of experience or information as to just how the work should be done. The old adage that "a cat can be killed by care" often applies to the setting out of trees and plants. All that is required to make failure certain is plenty of the wrong kind of care.

When a tree or shrub is taken up and transplanted it is naturally a severe shock to the whole plant. All of its normal functions are rudely interrupted; its source of food is entirely cut off and cannot be renewed until the roots which are left on it have reestablished their close contact with the soil and sent out new feeding roots—the tiny hairlike roots which are almost all broken off or destroyed in the process of transplanting. Like a patient after a severe operation, a newly set plant must be given the best conditions possible in order that it may convalesce quickly.

The two biggest causes of failure

in setting out trees and shrubs are, first, the fear that most people have of putting the plants in firm. Secondly, the great reluctance which all experienced gardeners have of cutting back the top.

In setting out any tree or plant it is essential to get it as firmly in the ground as possible. A planter who has sent out a lot of roses received back word from his indignant customer that "they had all died but one—which, strangely enough, her husband, who weighed over two hundred, had stepped on and broken when they were setting it out!" All the others, it proved upon investigation, had merely been placed in the ground and had the earth gently drawn over their roots and carefully patted down by hand on the surface. There is very little danger of getting the soil too firmly about the roots of any plant when setting it out. If it is a small tree or shrub the soil should be pressed down firmly about the roots with the foot, bearing one's entire weight. In case of larger trees, requiring a good sized hole to take the ball of roots, the soil should be filled in a little at a time and firmly tamped down with a blunt stick as the hole is gradually filled up. When the planting is completed the tree or shrub should be so firm in the ground that a considerable pull on the top will show no signs of loosening the roots.

Many planters cannot bring themselves to "poll the looks" of the tree or shrub that is to be planted. The reason why, in most cases, it is necessary to cut the tops back severely is that a large part of the roots have been destroyed, and in order to keep the balance between the roots and top even part of the top must also be sacrificed; otherwise the whole plant is weakened and may die.

The first thing to do with plants when they are received is to examine the roots without removing the wrapping of burlap or moss, and if they are at all dry give them a thorough soaking. If they are dried out it may be necessary to place the ball of roots with their wrappings in a pail of water for several hours. If possible, preparation for planting should be fully made before the plants arrive. The sooner they can be got into the soil the better. If delay is necessary keep the plants in their original wrapping in a light place where the roots keep moist. Or they may be removed and "heeled in"—that is, put into a trench in a corner of the garden or some other convenient place

where the roots can be covered with moist soil. They can be kept in this way without injury for a week or two, but should be planted as soon as possible.

The ground where the plants are to be set should be carefully prepared in advance. Where individual plants, such as fruit trees or large shrubs, are to be set dig a hole several feet in diameter and two or three feet deep. If the soil is very poor, a large part of it should be removed and the hole filled in with good garden soil. Usually, however, it will be sufficient to enrich the soil with well-rotted manure and several handfuls of coarse ground bone.

Coarse bone is preferable to bone meal because it lasts for several years instead of being used up in the first season or two. All trees require good drainage. Where there is a hard subsoil it is necessary to break this up with a pick or a crowbar so that the surplus moisture can drain down through it and the roots of the growing tree can go down as well as make a lateral growth.

Where shrubs or perennials are to be set in a "mass" planting, as in a border around the yard or against the house, dig up and fertilize the entire space. Where the soil is rather poor and it cannot conveniently be removed and replaced with good soil, an abundance of commercial humus should be applied and forked.

Most fruit trees, shrubs and perennials should be set out as early in the spring as work can conveniently be done. With care, however, planting can be done successfully as late as June. This applies to nursery grown stock with a mass of fibrous roots. Native trees or shrubs, or those which have been grown in pots, can be set out at a very low price, have only a few large roots and will not stand transplanting nearly as successfully.

If the soil is at all dry when the plants are being set it will help to water thoroughly. When water is used, however, it should be applied to the roots of the plant. Do not finish planting and then apply the water on the surface. If after enough soil has been put in to hold the plant in place the hole is filled up with water and this is allowed to remain until it soaks away it will be more helpful than any amount of water applied on the surface after planting. In fact, it is better to have the two or three inches of soil on the surface left dry, as this acts as a mulch and prevents the moisture escaping from the soil around the roots.



Antirrhinum.

Few flowering plants will produce more flowers or more beautiful coloring in the garden than antirrhinums. Massed in beds, in rows or in clumps, they are equally satisfactory, continuing in showy form from early summer to late autumn. There are tall, medium and dwarf varieties with a great range of color.

All these plants require a well dug garden soil, not too rich, setting in October, though the plants are set in the fall, the soil should be well manured and the plants set in the fall. The tall varieties eighteen inches apart, the medium varieties twelve and the dwarf nine inches apart.

It is, however, a mistake to suppose that this rest of plants is confined to regions of the earth where a cold season occurs; as a matter of fact, tropical plants have a season of rest also, only with them it comes at the dry period of the year.

It is likely that the periodic rest of plants may originally have been imposed upon them by drought and cold, but the fact remains that many plants now rest when there is apparently no necessity to call it forth. Kerner notes that in tropical seas some species of algae develop in March, some in June, and some others in October, though the conditions of light, temperature and moisture remain practically unchanged. Among our wild plants there are many species that rest in both summer and winter. The spring beauty and the adder's tongue enjoy a brief season of growth and bloom in early spring and then vanish from view until another seasonal season calls them forth for a short time. The crocus, tulip, narcissus and other cultivated bulbous plants behave in the same manner. Possibly the majority of the crocuses vary the proceedings by flowering in autumn instead of spring, resting in winter, producing leaves and fruit in spring and resting again in summer. Our common wild look has a somewhat similar habit. It produces its leaves in spring, and in July, long after the leaves have disappeared, the curious flower stalks push up out of the ground. Even when the plants are dormant, when they form the so-called spores by taking on a thicker cell wall. Other fungi form very characteristic winter spores called teliospores.

That a period of rest is in some way necessary or at least inherent in the various species that store up food in some underground part. Potatoes, carrots, parsnips and other roots stored in the cellar where the temperature varies but little during the winter will not put out new shoots until late in the season and those plants which form their flower buds late in autumn refuse to bloom in December even when given plenty of warmth, but they will bloom readily enough in the first mild days of early spring when the temperature and other conditions seem much less favorable. Annual plants commonly pass through the winter in the form of seeds, and though often scattered at the beginning of summer remain dormant through the warm weather to spring up and grow vigorously in the cool, moist days of spring. On the other hand, the seeds of plants that are not easily harmed by the cold of winter may grow as soon as the seeds are scattered in the soil. Among these are the seeds of rice, barley, mustard and many weeds like the evening primrose, prickly lettuce and shepherd's purse. In regions where wet and dry seasons alternate annually ripen their seeds before the dry season sets in and these will not grow until another wet season, through they may be moistened by an occasional shower in the meantime.

During the resting periods of plants the more obvious vegetable processes are held in check, but some activity within the plant may occur. During winter some of the spring flowering plants make more or less root growth, wounds caused over and over are moved on toward the terminal buds. Seeds also in many cases mellow and ripen after gathering through various chemical changes that occur. The difference between new and old seeds may often be told by the taste and smell, especially in the almond, hazelnut, hazelnut and chestnut. Similarly the flavor of parsnips and oyster plant is thought to improve when subjected to the cold, and the chufa when dried increases in sugar content. In some cases the changes that go on in

## Attach Tree Labels With a Large Loop, So Limbs Will Have Room for Development---Interesting Facts Regarding Period of Rest in Plants

seeds is not entirely chemical. In the ginkgo tree the fruit to all appearances ripens in autumn, but at the time that it falls from the tree the sperms have not yet fused with the eggs, and so, of course, no embryos are present. Under such circumstances one is scarcely warranted in calling it a seed. To complete its development it must lie in the earth for some months longer. The seeds of hawthorns are equally slow to germinate, but nobody so far as known has offered an explanation to fit their case. In some members of the gourd family the length of the dormant period has a curious effect upon the seeds and the plants that spring from them. Young seeds give plants that are inclined to produce vines at the expense of fruit. Accordingly it is the practice of gardeners to use melon and cucumber seeds that are several years old.

Notwithstanding the fact that plants appear to require a season of rest, several methods of shortening or eliminating it have been devised by man. This manipulation of a plant to make it bloom before its proper season is called forcing. Some plants may be more easily forced than others. Among those that most readily yield to such processes are the freesias, tulips, hyacinths, narcissuses and other bulbous plants. In forcing, as in many other instances in plant life, it has been found that heat, drought and cold have almost identically the same effect. Potatoes exposed to the sun for several days will grow much sooner than those not so treated, and also if kept in an icebox for a time they are equally ready to grow. Rhubarb and asparagus dug up in autumn and brought into the warmth of the house are slow to start, but if allowed to freeze first will soon begin to put up new shoots. An investigating German has recently discovered that dipping the plants in boiling water has the same effect as cold or drought. More effective than any of these methods is the process of etherization, in which the plants to be forced are exposed while dormant to the fumes of ether or chloroform for one or two days. Lilacs so treated may be had in full bloom three weeks later. In the case of the spring flowers which rest in summer a warm, moist autumn may act like a second spring and cause them to bloom again. Violets are especially inclined to respond to a mild season in this way, and there is scarcely a year that one cannot pick a bunch of violets in October. By searching long enough one may find flowers of all the spring plants in autumn.

The hunger of a marauding cow, two were all but forced upon a reluctant California grower, and the fourth made no history whatever, so it is safe to imagine it was strangled by red tape.

The trees that went West have made history a plenty; whole orchards have been budded from them, buds have been sold as high as \$10 apiece, the trees themselves had to be specially fenced in and guarded day and night, and are even to this day among the sights of the Golden State. Their progeny has overrun it in a little less than fifty years—for its good commercially—as to flavor, the less said the better. What the event may prove the wisest cannot foresee; if ever the navel orange shall be brought to live up to its looks the whole world will be its parish.

Since gardens began gardeners have sighed and tried to produce fruit after its fashion. There have been many, many curious expedients, such as splitting the stalk of a fruitful shoot and medicating its pith while its buds were in embryo. Layering and transplanting the rooted stems upside down was another. Still another was removing the seed lobes deftly from a

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### GOOD TREE LABELS.

By M. G. KAINS.

Tree labels in considerable variety have been tried by the public and have proved durable. Scarcely any have been found economical, easy to attach and harmless to the trees. Ordinary wooden ones rapidly turn gray and the writing upon them becomes illegible. Thin sheet copper ones, so often recommended to be written upon by a style or sharp point, by no means make good the claim that they are indestructible, for often after only one year's exposure they will leave nothing but the eyelet to tell where they once were. Zinc strips are no less disappointing, for they do not long retain the pencil marks; but worse, when any of the copper sulphate compounds are used in spraying with Bordeaux mixture, ammoniacal copper carbonate, &c., come in contact with the zinc, a chemical action takes place and the zinc literally melts away into this air-borne gas, which, as they often are in amateur gardens, with two or more varieties. In such cases each growing season would carry its own label.

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### THE REST PERIOD OF PLANTS.

By WILLARD N. CLUTE.

Regular periods of rest seem necessary to all forms of life. Young animals spend fully half their time in sleep and when they reach maturity they require at least a third of every day for this purpose. Plants, like animals, may be said to rest at night, inasmuch as certain processes cease as soon as daylight fades, but the nightly rest of plants is never so striking as that of animals. Some species, to be sure, make rather noticeable changes in the position of the leaves during the hours of darkness, and this phenomenon is known as the sleep of plants. From this one might infer that plants which do not make such changes do not have a period of rest. It is likely, however, that the changes in the position of the leaves have reference to purely mechanical problems of the plant and that the repose of one plant is as deep as that of another.

The period of nightly rest is the only form of dormancy that the higher animals experience, as a rule, but the simpler forms, and a few of the more highly specialized ones, such as the woodchuck, gopher and chipmunk, have a seasonal rest, and this is also experienced by plants. In northern regions, as winter approaches, the frogs, turtles, salamanders and many other creatures find some shelter and soon enter into a dormant state, in which they become torpid, unconscious and absolutely helpless, and this condition continues until warm weather returns.

While the nightly period of rest in animals is from sleeping that of plants, the seasonal rest is just the opposite. The most noticeable difference between sleep and hibernation, as the seasonal rest period is called in animals, is that in hibernation they seem totally unconscious and are roused only with difficulty, but in plants the very structure of the individual is affected. As the period of rest approaches the leaves are thrown off, the root hairs die, the buds are formed, cells thicken and the protoplasm exudes most of its moisture and becomes more resistant.

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